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To: Distribution

cc: S. Herron, L. Price

From: Carl Strawbridge

Subject: **Monthly Risk Assessment Methodology and Reporting**

Background and Purpose

A recommendation from the November 2002 DOE SC review was to provide a monthly realistic estimate-at-completion (EAC) and update of the risk based contingency analysis to the Federal Project Manager. To accomplish this, the current guidelines for the SNS Division and Senior Team Leader's (STL) monthly report submission are being modified. Effective with the December report (due January 20), the current requirement for STLs to submit an EAC each month will be replaced with a monthly risk assessment. This risk information will be used to identify, monitor, and generate appropriate management action on items that indicate potential technical, cost, and/or schedule risks to the project, and allow SNS/ORNL management to maintain a current and realistic EAC. The management EAC will consist of those risks that the SNS/ORNL management team believe have a high probability of materializing. Attachment 1 provides the process and Attachment 2 shows the format.

The risk information received in October from the subprojects and subsequently evaluated by the SNS/ORNL management team has largely reflected cost and schedule issues. At the current phase of the project, it is important to maintain this emphasis but also to add focus on potential technical risks (which may have associated cost and/or schedule impacts). Typical areas of technical risk for SNS would include: areas of undefined or incomplete design criteria or functional requirements, installation of untested or partially tested equipment, significant compression of testing schedules by production or fabrication delays, employment of first-generation equipment/components versus those with a mature design/fabrication basis, any software development, or any area where extensive, repetitive or time-consuming problems are being experienced. For all significant or critical risks, a mitigation decision and strategy should be determined to minimize impacts against cost baselines and integrated project schedule milestones.

Requested Actions.

 The current SNS project risk assessment table is attached as the basis for the initial input. STLs are requested to review this table and revise, add, or delete as appropriate and discuss changes with their respective SNS Division Director. To identify technical risk areas, STLs should work with SNS/ORNL division directors to identify areas of high concern from advisory and review committee reports, design reviews, other quality assessment reports for vendors, and a survey of the concerns of line management. Each month an updated table should be submitted as a separate file with the Monthly Report, replacing the previous monthly STL EAC; as before, changes should be discussed with Division Directors. Linac (LANL) and Conventional Facilities should assess risks at WBS level 4 or below, all others at WBS level 3 or below, consistent with current reporting requirements. The SNS/ORNL management team will review the updated risk plan monthly, update the SNS management EAC if appropriate and advise the DOE-SNS Project manager. Formal revisions to project performance baselines with change requests (PCRs) will be made to incorporate items from the EAC when determined essential for continued accurate performance evaluation. It is expected that change requests for items that have not been forecast in this monthly submission would be rare.

For questions or additional information, contact S. Herron, Project Controls Manager at (865) 241-5128 or e-mail herronsa@ornl.gov.

CNS:mah

Attachments (2)

Distribution: sns_stl@mailhub.ornl.gov

Attachment 1

Process for Risk Identification/Changes

1) Extract your worksheet from Attachment 2.

   Make changes (revisions, additions, or deletions) as needed. Please complete all empty fields. If there is no information to include, enter "none" in the field.

2) **REVISIONS**: Any field can be revised. The changes should be shown in red.

3) **ADDITIONS**: The additions should be shown in red. Information should be input in all columns. All risk elements for WBS 1.9, Integrated Controls, should be provided to the Integrated Controls Senior Team Leader (Dave Gurd) and reported by him. ASD will need to report risks by WBS, clearly distinguishing between Ring issues, Linac issues, and Operations issues.

   NOTE: All risks with a probability of occurring greater than 50% must be listed. Those with a lower likelihood may also be included as long as they do not add clutter and obscure the key issues.

   Use the following criteria for entering the information:

   a) Likelihood

   - Very likely (V): risk is likely to occur with a probability greater than or equal to 90%
   - Likely (L): risk is likely to occur with a probability greater than or equal to 50%
   - Unlikely (U): There is a less than 50% chance that this event will occur

   b) Consequence

   Consequence will identify impact that occurrence of this event will have on cost, schedule and/or technical performance of the machine. If there is no technical, schedule, or cost impact, "None" should be entered in that field. If there is a cost impact, include the estimated value. If an early finish schedule impact is anticipated, then the approximate number of days of that impact and the IPS activity should be listed. Only the affected activity needs to be listed. Successor activities will be identified directly from the schedule. The probability of each consequence occurring will be assumed to be the same unless otherwise noted.

	Marginal (M)	**Significant (S)**	**Critical (C)**
Cost: Impact of this item on the project's contingency is:	≤ $1M	≤$2M	>$2M
Schedule: Impact on the project schedule is:	None	Impacts intermediate IPS milestone dates	Impacts project early finish date
Technical: Impact on performance is:	Less than minor degradation	Significant degradation	CD-4 will not be met and/or future performance of the machine will not meet specified performance goals

c) **Type Risk**

List which consequence is the most severe; can be either technical, schedule, cost, or any combination of the three.

d) **Risk Expiration**

The risk expiration date should identify that date by which the risk will no longer be valid.

e) **Mitigation Strategy**

A strategy to reduce or eliminate the risk should be prepared for all significant or critical risks identified.

f) **Risk Categorization**

Use the matrix below to determine the risk ranking:

Consequence – Use
the highest of the
three ratings

	Marginal	Significant	Critical
Very Likely	*Moderate*	*High*	*High*
Likely	*Low*	*Moderate*	*High*
Unlikely	*Low*	*Low*	*Moderate*

Probability

4) **DELETIONS**: Items are to be deleted if: a) a PCR associated with the identified risk has been entered in the change control system, b) the risk expiration date has passed and the risk is no longer valid, or, c) the risk has been mitigated/eliminated by some other action. If the risk should be deleted, use the "strikethrough" font option and leave the entry in the table. Under mitigation strategy enter the PCR ID or the reason the risk element is being withdrawn (mitigated, expired, etc).

5) Each month thereafter, use your previous month's input and update using the process described above.